

AMENDMENTS TO THE CLAIMS

1. (original) A method of carrying out an oxidation reaction catalysed by a monooxygenase enzyme and using hydrogen peroxide as an oxidant, in which reaction a low level of oxidation damage of the monooxygenase occurs, said method comprising producing the hydrogen peroxide simultaneously with the oxidation reaction, wherein the hydrogen peroxide is produced at a rate less than or equal to the rate at which it is used in the reaction.
2. (currently amended) A method according to claim 1, wherein the monooxygenase enzyme has a K_m for H_2O_2 of at least 15nM.
3. (currently amended) A method according to claim 1-~~or 2~~, wherein the monooxygenase enzyme is a P450 enzyme.
4. (currently amended) A method according to ~~any one of the preceding claims 1,~~ wherein the rate of H_2O_2 production is less than or equal to 3 μg per mg of enzyme.
5. (currently amended) A method according to ~~any one of the preceding claims 1,~~ wherein the concentration of H_2O_2 throughout the reaction is less than or equal to 1 mM.
6. (currently amended) A method according to ~~any one of the preceding claims 1,~~ wherein the reaction continues for at least 240 minutes.
7. (currently amended) A method according to ~~any one of the preceding claims 1,~~ wherein the H_2O_2 is produced by an electrochemical reaction.
8. (currently amended) A method according to ~~any one of claims 1-to-6,~~ wherein the H_2O_2 is produced by an enzyme reaction.

9. (original) A method according to claim 8, wherein the enzyme is glucose oxidase.

10. (currently amended) A method according to ~~any one of claims 1 to 6~~, wherein the H₂O₂ is produced by a H₂O₂ precursor.

11. (original) A method according to claim 10, wherein the H₂O₂ precursor is perborate, percarbonate or perphosphate.

12. (currently amended) A method according to ~~any one of the preceding claims 1~~, wherein the substrate which is oxidised by the monooxygenase enzyme is an alkane, aromatic compound, terpenoid compound, alkene or fatty acid.

Claims 13-15 (cancelled)

16. (original) A method of carrying out an oxidation reaction catalysed by a monooxygenase enzyme and using hydrogen peroxide as an oxidant, in which reaction a low level of oxidation damage of the monooxygenase occurs, said method comprising carrying out the reaction in the presence of an H₂O₂ or hydroxyl radical sequestering agent that controls the H₂O₂ or hydroxyl radical concentration.

17. (original) A method according to claim 16, wherein the sequestering agent is EDTA.